

## **Archaeology of Northeast Thailand in Relation to the Pre-Khmer and Khmer Historical Records**

**David J. Welch<sup>1</sup>**

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*An earlier study of how the archaeological data from the Khmer period in northeast Thailand confirm and augment the information from historical texts is expanded into an examination of the early historic pre-Khmer and the post-Khmer periods. For these, both the historical and the archaeological data are more limited and problematic. The archaeological record confirms generally the changes associated with the transition from prehistory to history but raises questions about the sources of external influence and the types of political and economic organization which characterized northeast Thailand societies. More robust archaeological data and more precise chronological control will be necessary to test historical models of pre-Angkorian and post-Angkorian political development.*

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**KEY WORDS:** Southeast Asia; northeast Thailand; early historic period culture contact.

### **INTRODUCTION**

In a recently published paper (Welch, 1997), first presented at the Indo-Pacific Prehistory Association conference in Chiang Mai in 1994, I attempted to define ways in which the historical record could help archaeologists in interpreting the archaeological data of the period (ca. A.D. 1000–1300) during which Khmer state centered at Angkor in Cambodia controlled northeast Thailand and how in turn the archaeological record could confirm and augment the written data and test interpretations and models derived from the historical documents. This paper represents an

<sup>1</sup>International Archaeological Research Institute, Inc., 949 McCully Street, Suite 5, Honolulu, Hawaii 96826.

attempt to extend the method used in that paper to investigate earlier and later periods in Southeast Asian history, both (1) the actual transition from prehistory to history that occurred in northeast Thailand in the four to five centuries before A.D. 1000 and the absorption of the area into the Khmer Angkorian empire and (2) the period immediately following the collapse of Khmer power (ca. A.D. 1300–1600). Both these periods pose more difficult problems to the archaeologist and the historian because the number of historical records and the archaeological and historical information available are more severely limited than for the Khmer period.

The questions which underlie this examination are the same as those which constituted the basis of the previous report. How well do the archaeological data and the interpretations of the data accord with the written records? Can the archaeological data help historians interpret the written record? Can archaeological data be used to test interpretations, models, and hypotheses derived from the historical records? Finally, how can the historical record help the archaeologist interpret the archaeological record?

This paper begins with a review of the relationship between historical and archaeological documentation presented in the previous paper and then focuses on the preceding and subsequent periods. The initial study concentrated on the Khmer period, the A.D. 1000–1300 period in which northeast Thailand formed part of the Angkorian empire, because of the relative richness of the historical record and because the models developed by historians seemed to provide provocative directions which might suitably explain otherwise anomalous data in the archaeological record.

#### **THE STUDY AREA: THE PHIMAI REGION OF NORTHEAST THAILAND**

Based on the historical records, the Angkorian Khmer state was established early in the ninth century and its capital remained in the region of Angkor north of the Tonle Sap, the Great Lake of central Cambodia, until its abandonment early in the fifteenth century. In examining the relationship of the history and archaeology of the Khmer state and its predecessors, it might be thought best to concentrate on this region, the heartland of the Khmer state. Unfortunately, until the last few years historical events have largely precluded the archaeological surveys that would yield the data needed. However, because the Angkorian kingdom expanded far beyond the boundaries of modern Cambodia to include other parts of mainland Southeast Asia, the study can be focused in one of these other areas.

This study examines northeast Thailand (Fig. 1), in particular, the Phimai region (Fig. 2), where recent archaeological investigations have produced data on the general settlement patterns which characterized the early historic and Khmer periods. The Phimai region lies in the southwest section

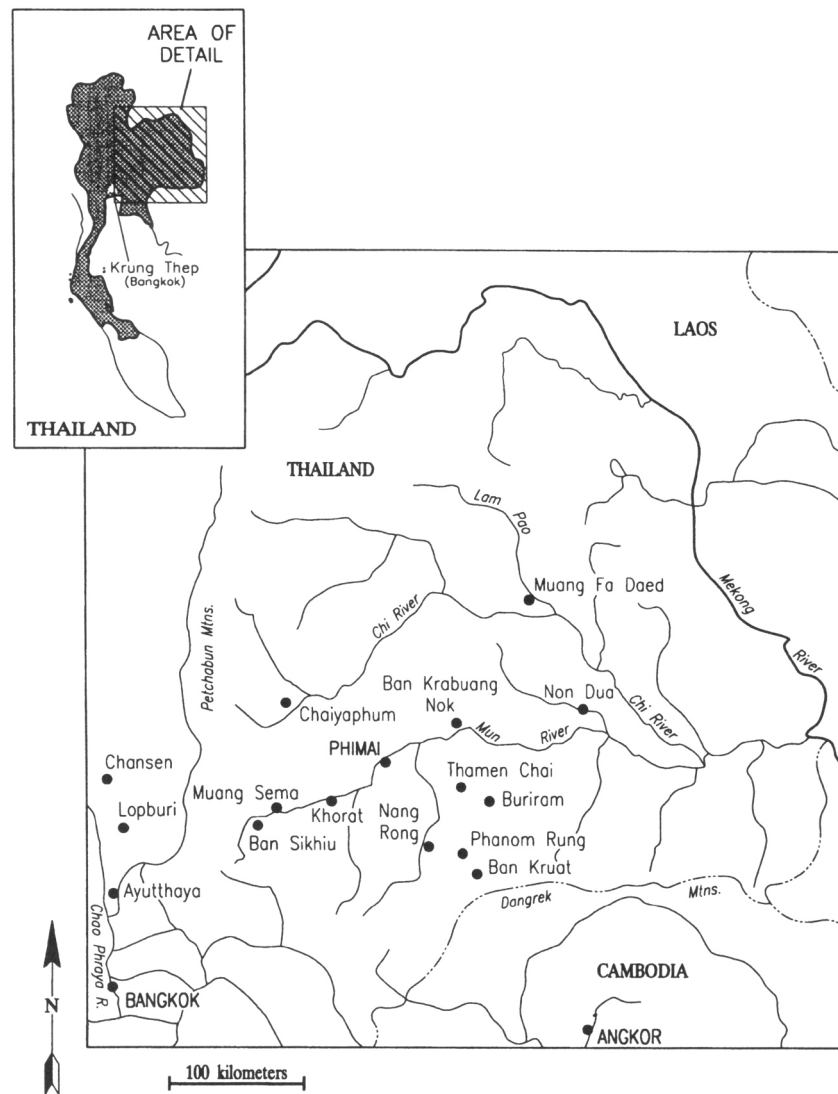


Fig. 1. Northeast Thailand and adjacent areas, showing the location of sites discussed in the text.

of northeast Thailand's Khorat Plateau along the upper reaches of the Mun River, the primary tributary of the Mekong River draining the southern portion of the plateau. Surveys by the Khorat Basin Archaeological Project (KBAP) in 1979-1980 and 1989 (Welch and McNeill, 1991) and 1994, supplemented by work by the Thailand Fine Arts Department (FAD), furnish the data on which an analysis of early historic and Khmer political and economic organization can be based.

The region was not integrated into the Khmer state until approximately A.D. 1000 under Suryavarman I, 200 years after Jayavarman II established Angkor as the Khmer capital. For the next 300 years, however, the town of Phimai served as a major regional administrative center and it is likely that the dynasty which ruled from Angkor for 200 of those 300 years originated in the upper Mun River valley at or near Phimai (Briggs, 1951). As a study area, the Phimai region is not a peripheral area, merely one which was integrated late into the Khmer state. The process of its integration was almost certainly not much different from that of the various regions in Cambodia that were earlier absorbed into the Angkorian state (Wolters, 1974; Vickery, 1986). From the few inscriptions that are available, it seems likely the early historic inhabitants of the Mun valley spoke Khmer or a related language and may well have shared cultural beliefs and traditions with the Khmer in Cambodia.

Prior to integration, the Phimai region contained large settlements surrounded by circular or irregular earth walls and moats that probably were the centers of small political units. Most of the population lived in cluster villages of 1 to 15 ha, some surrounded by moats, most unmoated, with cultivated rice fields lying beyond the moats. After A.D. 1000 and the establishment of Angkorian hegemony, there is a change to construction of rectangular walled and moated sites, rectangular reservoirs or *baray*, and rectangular temple enclosures, enclosing laterite, brick, and stone structures.

## **KHMER HISTORY AND PHIMAI ARCHAEOLOGY**

### **The Written Record**

For the Khmer state as it existed from its establishment at Angkor in the ninth century A.D. until the fourteenth century, when its power and hegemony over much of mainland Southeast Asia began to crumble, historical data are sufficient to provide a glimpse, though not a detailed view, of the organization and functioning of the state and government. Our understanding has been largely shaped by the writings of Chinese visitors to



Angkor and by the Khmer stone inscriptions (both these sources as translated and interpreted by Western scholars), supplemented by information from the work of French architectural historians at the Khmer temples in Cambodia. Among the Chinese records, the account of Zhou Duguan (Chou Ta Kuan) (1987) of Angkor and surrounding areas in 1295 and 1296 is the most important, containing several descriptions of physical features that made up the Khmer cultural landscape (fortifications, temples, rest houses along highways, markets, and the produce collected for trade), as well as statements of how these fit into the Khmer social and political systems. Stone inscriptions, discovered at sites throughout the Khmer empire, provide the second major source of information. The editing and translating of these texts by George Coedès produced the volumes on which the interpretations of Khmer history, Khmer social and political organization, and the causes of the rise and fall of the Khmer empire are based.

While the early and many recent historical writings tend to concentrate on the elite segment of Khmer society (e.g., Coedès, 1968; Sahai, 1970; Sedov, 1978), Paul Wheatley (1975, 1979, 1983) and Kenneth Hall have attempted to expand upon these traditional views by concentrating on interpreting the economic basis of early complex societies in Southeast Asia. Hall (1975, 1979, 1985) has developed a model of the economic organization of the Khmer state that sees the Khmer hierarchy of temples as the integrative force holding the political and economic systems of the state together. The donations to temples by the elite, so richly recorded in the inscriptions, made temples into local storage and redistribution centers. At the same time, the temples provided a societally sanctioned means by which resources and capital could be accumulated and labor mobilized, permitting the development of underutilized lands and, thus, expanding production to abundant unfarmed but potentially cultivable lands.

### **Archaeological Implication of the Historical Record**

These historical writings can provide a basis for predictions of what the archaeologist might expect to recover in the archaeological record: the types of artifacts, the patterning of the archaeological evidence, and particularly, the distribution of sites across the landscape. Based on the descriptions of Zhou Duguan (1987), the archaeologist would expect to find the remains of defensive walls and moats around provincial capitals, a temple at all Khmer village and town sites, and rest houses along ancient roads. The size of structures should be an accurate reflection of importance, wealth, and status.

Hermann Kulke (1986) argues that Angkorian Khmer state temples were increasingly constructed at the political centers and became the focal point for magicopolitical forces emanating from the center. Religious policy became a permanent and major aspect of kingship and this had its effect on what he calls the topography of the temples. If temples were closely associated with the center and with the level of political power, the structure of the state should be reflected in the patterning of temples.

Hall's interpretations take us a step further, because he sees the temples as the focus not only of the religious and administrative life of the Khmer state but also of the economy. Hall's model can be tested with the archaeological evidence and predictions about the distribution of temples and about the patterning of settlements in relation to temples could be derived from the model.

### **The Archaeological Evidence**

Based on the implications of these models, three aspects of archaeological evidence from the Phimai region that bear upon the interpretation of the Khmer political and economic organization were examined: (1) the distribution of Khmer temples and other permanent structures, (2) the spatial distributions and relations among all Khmer period (referred to archaeologically in Thailand as the Lopburi phase) sites, and (3) the material evidence in the form of artifacts and midden remains from Lopburi phase deposits at village sites.

#### *Distribution of Temples and Other Permanent Structures*

The distribution of Khmer sites with inscriptions or permanent structures, shown in Fig. 3, based primarily on late nineteenth-century surveys conducted by the French scholars Etienne Aymonier (1901) and Lunet de Lajonquière (1907), is neither uniform nor random across the landscape. The relative scarcity of temples in the Mun River alluvial plain, the area that contained the densest population in the Phimai region from prehistoric times (see Welch and McNeill, 1991), stands out clearly. The two largest temple complexes in the region, Phimai and Phanom Wan, are located on the alluvial plain, but no other temples are reported in the early archaeological literature. These two temples are clearly the major regional administrative and religious centers, their size and complexity reflecting the imposition of strong centralized control. More intensive recent survey has revealed that smaller temples are present at some alluvial plain villages; for example, the ruins of a badly looted brick structure including the base





a *linga* (the slender, upright, phallic-shaped stone symbolic of the Hindu god Siva) at Ban Prasat (recently excavated by the FAD, 1993), a structure which appears to date to the ninth century, but which continued in use during the Khmer period. These village temples were small, perhaps frequently built of perishable material, and did not survive in a form likely to be recorded by Lunet or Aymonier during their surveys.

Most temples are instead either concentrated along upper tributaries of the Mun River or dispersed across the older alluvial terraces away from the major streams and rivers, frequently in areas of poor-quality, sandy, saline soils in which suitable wet rice land is widely dispersed and the prehistoric site density was rather low. While unexpected, this distribution can be explained in terms of the models drawn from the historical records. Khmer inscriptions show that loyal followers of the ruler, rewarded with land grants, would construct a temple on their new land, dedicating it in honor of their leader and endowing it with people and goods. The servants of the temple in turn provided a labor force to clear land, plant crops, and exploit other resources within the nobles' land grant. This process provided a means of developing marginal, unexploited lands using the capital given to the temple and the labor of the servants of the temple.

Within this historical context the distribution of Khmer temples is explicable. The majority of known medium and small temples built of permanent materials are located in peripheral areas when considered from the point of view of a wet rice farmer. The areas rich in land suitable for wet rice cultivation had been settled since late prehistoric times and continued to be well populated into Khmer times. The new temples were the centers for the exploitation of marginal, previously unsettled lands. In these marginal areas the resources to be developed may not have always been agricultural lands but may have included salt deposits and iron ore sources.

One other type of permanent Khmer structure, as first noted by Finot (1925), is commonly found along routes of roads between major Khmer centers, including one connecting Phimai and Angkor. These structures, all similar in plan and size, lie about 10 to 15 km from one another, perhaps one day's journey, although there are sections separated by much greater distances. Finot called the structures Dharmacalas or rest houses and suggested that their primary function was as resting places for pilgrims making journeys to sacred places, either to Angkor or perhaps from Angkor to the temples at Phimai and Phanom Rung. Finot identified the structures at Srebo and Nong Plong as rest house; recent archaeological survey suggests that Ku Sila Khan may be a rest house, the first on the journey south from Phimai to Angkor.

This route probably served more than just pilgrims, connecting Phimai with Angkor both administratively and for trade. Exotic goods which en-

hanced the status of the Khmer regional elites probably flowed north, while tribute to the royal ruler at Angkor moved south. We know that imported goods from China were carried inland (Sung celadons are found at a few Phimai region sites), and forest products carried to Angkor for export. But the route also served internal trade networks. Given the location of many Khmer pottery kiln sites near this road, it probably served as a major route for the distribution of Khmer stoneware pottery both toward Angkor and toward Phimai. In addition, salt from the Mun River valley may have been carried to Tonle Sap and in return salted fish carried back to the Khorat Plateau (McNeill and Welch, 1991). This trade, carried on actively during the first half of this century, may date back to Angkorian Khmer or earlier times.

The distribution of Khmer temples and secular permanent structures is thus the result of a number of factors: centralization of political power, development of marginal areas, and placement along major trade routes.

#### *General Site Distribution*

Surveys in the Phimai region have identified 76 Lopburi phase (ca. A.D. 1000–1300) habitation sites in the sample survey blocks, which cover an area of 700 km<sup>2</sup>, plus a number of additional sites outside the controlled survey areas (Welch, 1997). Compared with the late prehistoric Phimai phase (ca. 200 B.C.–A.D. 300), the total number of Lopburi phase sites in the Phimai region is almost-identical (Table I), but in the uplands to the south of Phimai there is a significant increase in the number of sites, with 20 Lopburi phase sites identified, compared with 10 Phimai phase sites. Lopburi phase sites, however, are significantly smaller in size on average.

Using estimates based on site size alone, the population density on the Mun River alluvial plain may have been as high as 80 individuals per km<sup>2</sup> during the Phimai phase, but perhaps no more than about 50 persons per km<sup>2</sup> during the Lopburi phase (Welch and McNeill, 1991, p. 213). In addition, the quantity of cultural materials recovered or observed suggests a lower density of population at the larger sites during the Lopburi phase, although usually not complete abandonment.

While less common than late prehistoric sherds at large sites, Khmer ceramics are more in evidence at small sites: low mounds, rectangular in shape, which possess no evidence of use during previous periods of time. These types of sites have frequently been badly disturbed and are difficult to identify during surveys; thus, many more may have once existed, resulting in too low an estimate of the number and density of Lopburi phase sites.

Table I. Site Size and Density Figures for Phimai Region Sites<sup>a</sup>

	Survey area size (km <sup>2</sup> )	Number of sites	Site density (No./km <sup>2</sup> )	Site area (ha)	Area density (ha/km <sup>2</sup> )	Average site size (ha)	EPD (No./km <sup>2</sup> )
Phimai phase							
Alluvial plain	270	47	0.17	431	1.60	9.2	80
Terrace	130	14	0.11	72	.55	5.1	28
Uplands	300	10	0.03	81	.27	8.1	14
All survey blocks	700	71	0.10	584	.83	8.2	42
Muang Sema Phase							
Alluvial plain	270	41	0.15	264	.98	6.4	49
Terrace	130	7	0.05	35	.27	5.0	13
Uplands	300	17	0.06	94	.31	5.5	16
All survey blocks	700	65	0.09	393	.56	6.0	28
Lopburi phase							
Alluvial plain	270	44	0.16	292	1.08	6.6	54
Terrace	130	12	0.09	48	.37	4.0	18
Uplands	300	20	0.07	109	.36	5.5	18
All survey blocks	700	76	0.11	449	.64	5.9	32

<sup>a</sup>Site area, total area of habitation sites; area density, total habitation site area/sample block size; EPD (estimated population density), (site area × 50)/sample block area.

Although a number of sites were abandoned and new ones established, several aspects of the patterning of habitation settlements across the landscape remained little changed from earlier phases. Settlement continued to be most dense in the alluvial plain; access to suitable wet rice land seems to have remained a prime determinant of site location. In the areas of long-established settlement on the alluvial plain and low terraces, sites retain the clustered pattern of distribution found in the prehistoric period, a pattern which reflects the preferred placement of sites on high ground secure from flooding. There is no detectable clustering of sites around temples or any uniform spacing of sites in a central place type of pattern around central sites.

Important settlement changes did occur, however. The major change, the movement from large village sites frequently protected by walls and moats to small exposed hamlets, may reflect the establishment of a single political authority and the end of frequent warfare within the Phimai region. New sites are found in the salt dome area to the northeast of Phimai, particularly sites involved in the mining and smelting of iron. These kinds of sites sometimes cluster around new temples established in remote, formerly uninhabited areas. Although the patterning of sites across the landscape does not reveal a tendency toward regularity in site spacing or the emergence of a central place network, there is a straightening of the rank-size curve, which graphs the distribution of site size. The curve is notably convex for late prehistoric sites, expressing the presence of a high number of relatively large sites of similar size and probably reflecting incorporation of a number of independent centers in the sample. By the Khmer period, however, the growth of Phimai to twice the size of any other site, the apparent abandonment of some large sites, and the establishment of numerous, small villages results in a curve that is less convex than during the prehistoric period. This change is suggestive of the establishment of a single site hierarchy and of an integrated political and economic system throughout the Phimai study area.

#### *Small Settlements of the Khmer Kingdom*

The artifactual and midden records from excavations of small habitation sites in the Phimai region were examined to see to what extent the elements of elite Khmer culture penetrated to the village level of society, an aspect of Khmer history about which the written documentation is silent. This silence may well have led to misinterpretations of the historical evidence by the resulting overemphasis on elite culture. Unfortunately the excavated sites in the Phimai region produced only limited evidence from

the Lopburi phase; even determining what defines a deposit of this phase remains problematical in sites where Khmer glazed stonewares are rare (never making up more than 1 to 3% of the sherds from any depositional unit) and may have survived and been curated for generations and thus be found in deposits dating much later in time.

Two excavated habitation sites contained definite Lopburi phase deposits. At Non Si Fan Noi (see Fig. 2), a deeply stratified site with cultural deposits over 3 m deep, Layers II and III produced remains from the Lopburi phase. Twenty-two glazed stoneware sherds were included in an assemblage dominated by over 1000 undecorated, plain earthenwares. Two test units at Non Ban Kham contained probable Khmer layers, also with undecorated pottery dominating an assemblage containing only a few stoneware sherds. Evidence relating to subsistence practices is scarce. The faunal evidence is limited at both sites: a few bones from vertebrates and mammals, not identifiable at a lower taxonomic level, and a few shell remains of fresh water snails. Most common were bivalves of a type probably collected from flowing streams. This paucity of faunal remains is in stark contrast to the richer prehistoric layers at these sites. The reasons for this lack of evidence are not clear.

### THE EARLY HISTORIC PRE-KHMER PERIOD

The Khmer domination of the southern portion of the Khorat Plateau, accomplished soon after A.D. 1000, was preceded by over four centuries of development which is recorded only very sparsely in the historical records. The period, which is termed the early historic period, truly marks the transition from prehistory to history on the Khorat Plateau. Here we are faced both with a sparse historical record and an archaeological record that is difficult to interpret. As the reader may have noted, in the above discussion the archaeological record of the Khmer period was generally compared with that of the late prehistoric period, allowing a clear contrast and avoiding the problem of dealing with the early historic transitional period that links one with the other.

As with the subsequent Khmer period, we are faced with two types of historical text: those written by visitors from outside Southeast Asia and indigenous texts written by literate members of Southeast Asian societies. Both kinds of text exist as a result of the opening of contact between Southeast Asia and literate societies outside the area, and thus the issue of the nature of this contact is crucial to understanding this period. The outside accounts are derived usually from the observations of Chinese, and rarely from those of Indian or Western visitors, to Southeast Asia (Wheatley,

1966) or the records of visits, usually tribute missions, from Southeast Asia to the Chinese court (Smith, 1979). The recording of indigenous texts depended upon the introduction and adoption of a system of writing from the Indian subcontinent.

### Chinese Records

The foreign accounts that have reached us are unfortunately never the original manuscripts prepared by the visitors themselves but are versions or summaries of the original accounts prepared by later scribes and incorporated into manuscripts that have survived. The most common of these, and the only ones that at present seem to have relevance to understanding early historic societies on the Khorat Plateau, are Chinese texts discussing lands to the south. The earliest, dating to the third century A.D., concern only the coastal cities and polities involved in maritime trade, such as Funan, with whom the Chinese came in contact (Wheatley, 1966). However, later accounts refer to interior areas and a few from the seventh and eighth century, as well as records of tribute missions recorded in Chinese dynastic histories, may refer to lands on the Khorat Plateau.

Ma Tuan Lin (1883, p. 477), using the *Sui-shu*, an A.D. 598–618 Sui dynasty record, as his source, mentions that to the west of Chenla (a pre-Angkorian Khmer polity frequently mentioned in the early historical records) is the kingdom of Chu-chiang, which Briggs (1951) suggests may have been located in the central Mun River valley. The Chinese received five eighth-century embassies from Wen T'an, which one Chinese source identifies with Land Chenla and which an itinerary of the Chinese pilgrim Chia T'an places as 16 days' journey southwest of a port in northern Vietnam (Smith, 1979). Dupont (1943) associates Wen T'an with the Chenla kingdom that the Khmer inscriptions call Bhavapura. Coedès (1936, p. 1) has suggested that Wen T'an, which would formerly have been pronounced Muen-tan, stands in Chinese for the Sanskrit *mula*. Thus, its name may have the same origin as the Thai river name *Mun*, which is also derived from the Sanskrit *mula*. Wen T'an may then have been located in the Mun River basin, most likely along the lower part of the river. The rulers of Wen T'an engaged in one war against the Chinese, fought as allies of the Chinese against Nan Chao, and sent trained elephants as gifts to the Chinese court (Briggs, 1951, pp. 58–60).

The Chinese records relating directly to the Khorat Plateau are of only limited use in understanding early historic societies of the area, except insofar as they tend to tie the area to other polities in Cambodia, entities about which, as discussed below, a little more information is available.

### Indigenous Inscriptions

The early indigenous texts that have survived are inscriptions carved on stone stelae. They generally are records of religious donations made by rulers, invocations to the Buddha or an Indian deity, and occasionally the recounting of military conquests. The earliest inscriptions are in Sanskrit only; later indigenous languages, such as Khmer and Mon, appear on some inscriptions, although usually limited to lists of the names of servants or bondspersons presented to a temple. Only later do Khmer texts become common. The earliest datable mainland Southeast Asian inscriptions, found in Cambodia, derive from the sixth century A.D.

The earliest inscriptions from the Khorat Plateau are two Sanskrit inscriptions, both from locations on the edge of the plateau, that may date to late in the sixth century A.D. The first, found on a stela at Thom Pet Thong cave (see Fig. 3) near the Cambodian border, celebrates the erection of a *linga* by Sitrasena, the brother of Bhavavarman I, the first known ruler of Chenla (ca. 550–600) (Seidenfaden, 1922, p. 22; FAD, 1959, p. 68). This probably commemorates a victory by Bhavavarman, perhaps the earliest Khmer penetration of the southwestern edge of the Khorat Plateau. The second inscription, less firmly dated to the late sixth century, dedicated a statue of the Buddhist goddess Sri and was carved on a pedestal found at Chan Tuk, a moated site on the Takhong River at the west edge of the Khorat Plateau (Jacques, 1969, p. 69).

In the upper Mun River valley, these inscriptions are followed by a few scattered others that date to the next four centuries. A stela found in the village of Bo Ika, on the rampart of the moated site of Muang Sema, was inscribed on each face. One face, carved in seventh-century characters in Sanskrit, possibly dating to A.D. 700 (Coedès, 1954, pp. 83–85), records offerings of laborers and water buffaloes to the Buddhist monastic community by the ruler of Sanasa. The inscription on the second face, containing a Sivaite invocation in Sanskrit and a list of laborers in Khmer, bears a date of A.D. 863 and records the erection of a *linga* to Siva by Ansadeva, a man who has obtained an abandoned domain beyond the borders of the Khmer kingdom, presumably in the Takhong River valley where the inscription was found (Coedès, 1954, pp. 83–85).

At Phimai, the earliest inscription, carved in Sanskrit on a stone that was later incorporated in a window frame of the temple gallery, was composed for a king called Suryavarman and invokes the Buddha (Jacques, 1969, pp. 58–59). At Hin Khon, a pair of *sema* stones, the upright stones that form boundary markers of the sacred building within a Buddhist monastery-temple compound, was inscribed with lines in Khmer and in Sanskrit. According to the inscription, a former prince who became a monk

erected four *sema* stones and donated 10 monasteries provided with personnel, fields, and buildings. Among his donations were a plantation, rice fields, 10 pairs of cattle, an elephant, betel, and objects of gold, silver, copper, and iron (Coedès, 1954, p. 73).

Several inscriptions have been found in the lower Mun River valley, the proposed location of Wen Tan, and some of them include lines in Khmer. Seventh- to tenth-century inscriptions in the Chi River drainage (see Fig. 1) are all in Sanskrit. One of these, carved on a stone found near Wat Phra Meo on the Lam Pao, mentions Brahmins, an assembly, and a boundary official who has erected the stone to mark a boundary fixed by the assembly (Solheim and Gorman, 1966, pp. 159, 181).

### Interpretations of the Early Historical Texts

The inscriptions clearly demonstrate the adoption of Indian concepts by the rulers of Khorat Plateau communities. They adopted the Sanskrit language for writing and religious ritual, a Pallava alphabetical writing system, Indian religious ideas and practices, both Buddhist and Hindu Sivaite, and Indian principles of statecraft, including the use of Indian honorific titles and a reliance upon religious ideology to support the political order, specifically the worship of the Siva *linga* and the identification of the ruler with Siva. The veneration of Buddha and Siva appear to coexist; invocations to both are common and, at Bo Ika, appear on two sides of the same stone.

The local elite practiced Buddhism, established monasteries, built *stupa* (Buddhist relic shrines), and made large donations of rice fields, cattle, and water buffaloes to the monasteries. References to water buffaloes as gifts of importance probably reflect their use as draft animals in preparing rice fields. While the religious invocations on the inscriptions are in Sanskrit, the names of bondspersons and sometimes the lists of donations are in Khmer, suggesting that the vernacular language may have been Khmer.

The written record provides evidence of several inland organized political units in the Mekong River valley by the seventh century. Most of these were probably located in Cambodia, but a few, such as Bhavapura, may have been located on the Khorat Plateau. Interpreting the type of political and economic organization that may have characterized these polities has proven problematic, given the limited evidence available. Traditional histories (e.g., Briggs, 1951; Coedès, 1968), relying on the evidence from the Chinese, recount a replacement of the Funan kingdom by the inland Khmer state of Chenla in the sixth century, followed by a breakup



of Chenla into two states: Land Chenla (Wen Tan) and Water Chenla. Recent research suggests that this scenario is too simple, interprets too literally texts whose purpose was to legitimize later rulers by creating royal genealogies, accepts Chinese views of Southeast Asian cultures too readily, and probably overstates the power and area of control and influence of these early "kingdoms."

Using the Chinese accounts and the corpus of pre-Angkorian inscriptions, Wolters, Wheatley, Smith, and Vickery have produced somewhat different models of political and economic development during this early historic period. Wolters (1973, 1982) has suggested that the pre-Angkorian polities that are mentioned by Chinese visitors and which sent tribute missions to China, were organized as *mandala*. These were units organized around the ruler, his court, and his capital, based on the ruler's sphere of influence and held together by alliances with other lords. Territory and boundaries were not key elements defining these polities. Sometimes the leaders were able to extend their power beyond their local domains and incorporate other polities, but these large regional "kingdoms" did not endure for long. Wheatley (1983) emphasizes the theocratic basis of these political units, sees them as chiefdoms in the classic anthropological sense, and infers that the economy was therefore based on a redistribution of resources by the chiefs. Smith (1979) interprets the evidence of seventh-century tribute missions from only a few polities as evidence of a consolidation of power under the kingdom of Chenla, while the eighth century record of numerous polities sending missions suggests a weakening of central authority and the shift of power to smaller political units. Vickery (1996), on the other hand, focusing on the inscriptions and architectural data, argues that a gradual centralization of power occurred from the sixth through the eighth centuries. The Chenla leaders of the early seventh century appear to have been powerful paramount chiefs, but by the end of the century a state form of organization had begun to emerge, forming the basis for the Angkorian state.

### Early Historic Period Archaeology

The archaeological evidence confirms the importance of Indian influences transmitted to the Khorat Plateau from the seventh to the tenth centuries. The traditional focus has been on works of art, studied and interpreted by art historians, and these are not surprisingly generally of a religious nature. Some of these are directly associated with the inscriptions: at Chan Tuk, the inscription is on a circular stone cut in the form of a lotus (Jacques, 1969, p. 69); at Hin Khon, Lunet (1907, p. 243) illustrated

the figure of a *stupa* carved on one of the inscribed stones. The Lam Pao inscriptions are written on *sema* stones and frequently found in association with *sema* stone alignments and brick foundations that are interpreted as the remains of Buddhist structures. At sites such as Muang Fa Daed Song Yang in the Lam Pao valley, Buddhist carvings are found in great numbers in association with brick *stupa* and other Buddhist religious structures. Buddha images, in what is interpreted as Dvaravati style, the style characteristic of the architecture and sculpture of the Chao Phraya basin in Central Thailand during this phase, have been found at several sites; e.g., the hand of a Buddha image at Muang Sema (FAD, 1959, p. 61), the upper body of a standing Buddha at Hin Tang (Seidenfaden, 1922, pp. 88–89), a statue of the Buddha at Ban Thamen Chai (Wales, 1957), and a group of Buddhist images from Pak Khon Chai (Woodward, 1975).

My concern in the rest of this section is to get beyond, although not ignore, the obvious parallels between the religious iconography and the religious focus of the inscriptions. This involves, as with the Khmer period study, an examination of the excavated artifactual evidence and site distribution as a potential reflection of political and economic organization and of contact and exchange.

What is of great interest is that at approximately the same time as the earliest written records, there appears to be a significant cultural transition indicated in the archaeological record of the Khorat Plateau. Definitely in the Phimai region, but also elsewhere in the northeast, the end of the first millennium B.C. and the first half of the first millennium A.D. is a period of apparent long-term stability in the material culture record. In the Phimai region, a single pottery tradition, the Phimai tradition, dominated a widespread area for many centuries. People lived clustered in small to large villages, circular, oval, and irregular in shape, frequently enclosed within moats and earthen walls. Long-term occupation at these sites built up high mounds rising 2 to 5 m above the surrounding rice fields. Within these mounds the people buried their dead beneath their houses or gardens, generally laying out the bodies, sometimes placing the bones in large urns.

Then, corresponding closely with the beginning of written records, several changes occurred. Phimai tradition pottery, except for the most basic undecorated chaff-tempered earthenwares, ceased to be made and a grog-tempered, more highly fired, frequently wheel-turned pottery became increasingly popular. Incising replaces streak burnishing as the most common form of decoration. Inhumation burial disappears; urn burials continue but may contain only the ashes from cremation rather than bones. In the Phimai region the archaeological phase following this transition but predating the Khmer period is termed the Muang Sema phase (ca. A.D. 600–1000).

Unlike the Phimai tradition pottery, which seems to have been confined to the upper Mun River valley, with few similar types found elsewhere (Welch, 1989, p. 20), these Muang Sema phase ceramics are part of a widespread tradition of pottery making and decoration which characterized this time period in mainland Southeast Asia. However, as discussed below, the source of this tradition, the directions in which it spread, the closeness of the connections between particular areas, and the extent of regional variation within the tradition are topics awaiting a broad scale comparative study.

These changes are not restricted to the Phimai region. At Ban Krabuang Nok, where extensive excavation of a site with thick early historic deposits has been conducted, similar changes can be seen. Although the excavators have condensed 4 m of deposits into a single phase covering the late prehistoric and early historic periods, the stratigraphic evidence presented in their report (Indrawooth *et al.*, 1989, pp. 146–150) indicates a clear distinction between the lower and the upper parts of the deposit constituting this phase. Two new types of pottery and potsherds with jar spouts, as well as beads and glass fragments and other types of artifacts, first appear in the upper part of the deposit. These ceramics possess attributes which clearly fit within the common style and technology of early historic period pottery manufacture.

#### *Site and Temple Distribution*

For the Khmer period, the distribution of temples was clearly crucial to understanding the organization of the state. For the pre-Angkorian period, this may be less so. Kulke (1986) suggests that prior to the integration of areas under Angkor religious structures would have been built primarily at locations considered sacred for the purpose of promoting worship at these places. The temple built early in the Angkorian period at Khao Phanom Rung, a volcanic cone rising high above the Buriram plain south-east of Phimai, is the most outstanding and obvious example of this kind of site in our study area. However, other large early historic period sites on the Khorat Plateau, such as Muang Sema and Muang Fa Daed Song Yang, also possess special characteristics compared with later temples, which might suggest special placement. Muang Sema is a large moated site, with evidence of several expansions of the moat surrounding the site. The site, however, has characteristics not found at typical late prehistoric and early historic moated sites in the Phimai region. The interior of the site is comprised not of a single habitation mound, such as a village settlement would create, but of a number of small mounds on each of which is found

evidence of the former presence of brick or laterite structures. What we may be observing at Muang Sema is not a large village or an incipient administrative and economic center, but a large sacred, ceremonial center. Muang Fa Daed Song Yang possesses over 14 religious structures (Buddhist *stupa* and *vihara*) scattered within and in the vicinity of a complex of waterways, but only limited evidence of habitation (Indrawooth *et al.*, 1991).

The appearance of such large ceremonial centers is perhaps the most striking change in the archaeological landscape during the early historic period. Muang Sema and Muang Fa Daed Song Yang are merely the most impressive of several large centers established in northeast Thailand. Similar ceremonial centers (large sites, generally built within a network of controlled waterways, with numerous religious structures and minimal habitation evidence) appear at about the same time in other parts of Southeast Asia, such as the site of Ban Wat in Pattani, southern Thailand (Welch and McNeill, 1988). At present we know little of the distribution and patterning of early historic temples and the role they played in northeast Thailand and it is premature to assess the patterning that might have characterized this period. As at Phimai, many of these early religious structures may be buried beneath later Khmer period temples and are yet to be identified in the archaeological record.

The patterning of Muang Sema phase habitation sites exhibits no dramatic change from the late prehistoric period (see Table I). The Mun River alluvial plain, with its abundance of suitable rice soils, remains the most densely populated area. Site density decreases on the old alluvial terraces northwest of the Mun River but increases in the uplands to the south. Average site size decreases, as several moated and unmoated sites are abandoned, and numerous new, relatively small sites are established. An overall decrease in the area occupied by settlements suggests that the population density may have been lower than in the late prehistoric period. The large moated sites, possibly small local centers during the late prehistoric period, may have continued to function in much the same role. The site distribution is what one might expect of a transition to the Khmer period and of an area under the control of regional chiefs with shifting, unstable power centers.

The site patterning generally supports the historical view of this period as one of regionalized political centers, focused around large moated sites. The largest sites appear to be predominantly ceremonial rather than administrative centers, focal points for societies which were becoming integrated more through the shared beliefs and rituals of supraethnic religions than through political unification. This contrasts with the Khmer period, when, in centers like Phimai, the central ceremonial precinct is enclosed within a larger rectangular, planned, walled, and moated town that almost

certainly was the focus of economic and political activity. The data are certainly not at odds with an interpretation of the political landscape as one of chiefdoms, of fluctuations of power between various chiefdoms, and of unification followed by breakup, as might be expected in hierarchical societies that are not yet states. The data, however, are far from adequate to test meaningfully any of the historical models.

One must remain hesitant to go too far with the interpretation of these data, if for no other reason than that our control of the temporal dimension of the archaeological information is not strong and the extent of contemporaneity is in doubt. Several of the problems that hinder the clear interpretation of the Lopburi phase material also inhibit a clear view of the early historic period. The Muang Sema phase lacks a definitive horizon marker such as the glazed stoneware of the Lopburi phase. Many of the more common incised decorative motifs continue in use and are also found on Khmer period earthenwares and stonewares. In the Phimai region, it is frequently the absence, on the one hand of Phimai black, the common decorated pottery of the late prehistoric period, and, on the other, of Khmer stonewares that is most diagnostic in defining an assemblage as dating to the Muang Sema phase.

#### *Sources of Contact*

A major problem in the treatment of this period lies in the fact that the interpretations of epigraphers, art historians, historical archaeologists, and prehistoric archaeologists—each focusing on the materials most familiar to their own discipline—have not always been in accord with one another. The evidence examined by art historians has suggested that the closest links for the Khorat Plateau were with the Chao Phraya River valley in central Thailand, where the Dvaravati art style flourished. Southeast Asian historians have sometimes tended to see these Buddhist religious art objects as an indication of the spread of Mon influence northeastward from the Chao Phraya River valley (e.g., Wales, 1969) and even of political control by a Dvaravati kingdom (Coedès, 1958, p. 128).

Archaeological excavation at first seemed to support this viewpoint. Wales (1957), who at Muang Phet and Ban Thamen Chai conducted the first excavations of early historic sites on the Khorat Plateau, was strongly influenced by these views, and saw in the site planning and the pottery recovered from his excavations further evidence of close connections with Dvaravati sites in central Thailand. Bronson (1976), examining collections from excavations of fill within the Phimai temple compound, saw similarities in the pottery to the type of late Dvaravati period pottery found at

Chansen. Indrawooth *et al.* (1990, 1991) noted close connections between the pottery excavated at Muang Fa Daed Song Yang and Ban Krabuang Nok and that from central Thailand Dvaravati sites.

On the other hand, the epigraphic evidence points more strongly to Cambodia as the origin of outside contact for the Khorat Plateau. The language used was most commonly Sanskrit, as in Cambodia, whereas Pali was more commonly used in the Chao Phraya basin. And, as discussed above, many of the texts establish connections with the pre-Angkorian Khmer state of Chenla.

Archaeological evidence since the excavations by Wales has cast some doubt on the Dvaravati connections. With larger collections of pottery from several areas of mainland Southeast Asia, the relationship appears not as close as earlier imagined. The pottery of the sites near Phimai seems only distantly related to the Dvaravati pottery of central Thailand. New survey and excavations at Muang Phet have shown that what Wales saw as Dvaravati pottery is in fact the typical late prehistoric pottery of the Phimai region (McNeill, 1997). For the pottery that can be dated to the early historic period, there are some similarities with Dvaravati in the techniques of manufacture and the use of grog-tempering. The early historic pottery excavated by the KBAP at village sites in the Phimai region appears, however, to be only distantly related to the early historic pottery recovered by Mudar (1993) from sites in the Malaeng valley, a tributary of the Chao Phraya in central Thailand.

On the other hand, neither the evidence from the Phimai region nor that from excavations in the Lam Pao valley suggested close connections with the known archaeological evidence from Cambodian sites. Prior to 1995, however, the evidence of pre-Angkorian sites in Cambodia was limited largely to the materials excavated at Oc Eo, believed to be an entrepot of the Funan kingdom during the early to middle first millennium A.D. Excavations at sites in the Phimai region yielded no evidence suggesting contact with Oc Eo, either before or after the sixth century. Reports of survey and excavations in the middle Mun River valley note similarities to Oc Eo materials, but the nature of the links is not specified and therefore cannot be evaluated. Only at Ban Krabuang Nok, which lies on the west edge of the middle Mun region just beyond the area included within the Phimai tradition, did Indrawooth *et al.* (1989, p. 127) suggest a definite comparison with Oc Eo. The spouted jars with short necks seem to relate to Oc Eo rather than to Dvaravati sites of the Chao Phraya basin.

Recent excavations at Angkor Borei, a large moated and walled site along the Mekong River in Cambodia, by the Lower Mekong Archaeological Project (Stark, this volume) have resulted in the recovery of pottery showing stronger similarities to that from the Phimai region. The pottery

is more diverse in form than that from Oc Eo and probably represents a longer sequence of occupation. The connections with the Phimai region pottery are particularly close in the ceramics, which most likely date to the end of the pre-Angkorian sequence at Angkor Borei. The probability of close collections with Cambodia now appears much stronger. It is clearly time for a reexamination of the links between pre-Angkorian Cambodia and the Khorat Plateau.

### THE POST-KHMER PERIOD: COLLAPSE AND ABANDONMENT?

The post-Khmer period is as problematic to the archaeologist and historian as the pre-Khmer period. To some extent research on this period becomes a matter not of matching historical accounts with archaeological data, but of dealing with an equal scarcity of historical and archaeological data. After A.D. 1300 inscriptions cease to be written, monumental works of architecture cease to be built, and the Angkorian Khmer state starts to disintegrate. From later sources—Thai, Lao, and Khmer chronicles—a general history of what happened in that period can be reconstructed. A weakening of Khmer state power was matched by an increase in the power of Thai polities, first those centered around the early Thai city of Sukhothai and later the Thai kingdom with its capital at Ayutthaya. In a series of wars, the Thai defeated the Khmer, several times capturing Angkor according to the Thai chronicles. Eventually in 1431 the Khmer abandoned Angkor, marking the end of the Angkorian kingdom. The Khmer established a weak state around Phnom Penh, while most of their former state fell within the sphere of influence of the Thai kings of Ayutthaya.

The effect of these events on the Khorat Plateau societies is obscure. The upper Mun valley, positioned as it is between the Thai states concentrated along the Chao Phraya River and the Khmer realm centered along the lower Mekong and Tonle Sap in Cambodia, may have well been a major zone of war and conflict. The Thai chronicles relate that the Thai king Ramathibodi I, the ruler of Ayutthaya from 1349 to 1369, conquered this area from the Khmer (Seidenfaden, 1923, p. 17). In the fourteenth century, the Lao kings extended their power down the Mekong and up its tributaries. Thai legends hold the Lao responsible for destroying the tower of the Phimai sanctuary, although there appears to be no historically acceptable evidence of this.

As elsewhere by 1300, Khmer temples, cities, and reservoirs ceased to be constructed in the Phimai region and no more inscriptions were written. Khmer kilns ceased production of the stoneware ceramics that were exported widely throughout the Khmer empire. Except for the mention of

Ramathibodi's conquest of the area, historical narrative of the area resumes only around 1600. Then come several references in the Thai chronicles: in 1593 the Ayutthaya king raised an army in Khorat to fight the Khmer (Valibhotama, 1961, p. 63), in 1638 Thai control of Khorat is mentioned (Keyes, 1967, p. 65), and under King Narai (1656–1688), fortifications were built around Khorat, which became the provincial center for those parts of the Khorat Plateau under Thai control (Keyes, 1967, pp. 6–9). Five towns—Phimai, Chan Tuk, Chaiyaphum, Buriram, and Nang Rong—fell within the circle of Khorat's power (Vallibhotama, 1961). Khorat, Phimai, and Ban Si Khiu appear on a map of Thailand drawn by the Dutch trader deGroote in 1636 (Kennedy, 1970, p. 320) (see Fig. 1).

The historical archaeologist faces the question of how to deal with an “historical period” of 300 years that is largely without a history. Can archaeology fill in the gap and perhaps help explain this gap? Unfortunately, the archaeological record, as known to date, suggests a gap between the Lopburi phase and a clearly “Thai Khorat” phase very similar to that which characterizes the historical record. The archaeological evidence is clear that sites, especially in marginal areas, were abandoned, most not to be reoccupied until early this century, when Lao expansion and increasing population pressure elsewhere in the northeast pushed migrants into resettling these ancient village sites. Oral traditions confirm the archaeological record. Villagers today relate stories of the migration of their grandparents and great-grandparents to settle in these locations. In contrast, in the more productive rice-growing areas, especially on the alluvial plain of the Mun River, there are no oral traditions of such movement and most people relate that their ancestors always lived there. In some cases village records are produced which trace the village history back 7 to 10 generations, 200 to 300 years.

Confirming a record of continuing occupation in the archaeological record has proven difficult. No cultural deposits have been radiocarbon dated to this period, and the archaeologist faces the problem of defining what cultural markers characterize this phase archaeologically. We can very easily and precisely define the material culture characteristics that separate Thai Khorat assemblages from Khmer assemblages. Thai Khorat pottery is bleb-tempered (rice chaff-tempered fragments of crushed fired clay) and decorated with carved paddle designs similar to those on late Ayutthaya period pottery from central Thailand. Structures are built of brick, using bricks of a size and type characteristic of Ayutthayan brick structures. The problem is knowing when these cultural elements took hold in the Phimai region. Were they introduced and accepted only when the Thai established definite control, in the early seventeenth century according to the chronicles, or do they date back farther? If they do not date any earlier, what



characteristics define the pottery, other artifacts, and structures during the early post-Khmer period?

The artifacts that most clearly can be dated to this period, Ming blue and white porcelains, other Chinese ceramics, and Sawankhalok celadons, are also items that are most likely to have been curated, cared for, and used for generations. Thus the presence of these objects in small numbers in a deposit does not necessarily date that deposit to the period of their manufacture. They are as likely to be found in Thai Khorat phase deposits. Since we have no evidence of when the Thai Khorat pottery started to be made, its presence is an uncertain temporal marker. What is apparent, though, is that there are no deposits with a different type of pottery that can be placed between Lopburi phase and Thai Khorat phase pottery manufacture. It is possible that locally made Lopburi earthenwares continued to be produced for a century or two after the Khmer collapse and were only gradually replaced by Thai Khorat pottery. In that case defining what happened in the intervening centuries will be difficult.

If the gap in the archaeological record does reflect a large-scale population decline following the Khmer period, what were the causes of this decline? Recently Nitta (1992) has suggested that collapse on the Khorat Plateau was the result of over-exploitation of the environment during the Khmer period. He argues that large-scale iron and salt production requiring vast amounts of fuel resulted in the destruction of the northeastern forests and serious environmental degradation.

This scenario is certainly plausible, but while we know that large-scale salt and iron (as well as pottery) production characterized the Khmer period, we have no direct evidence of their ecological effects. Paleoenvironmental evidence will be needed to confirm or disconfirm Nitta's hypothesis. Alternative hypotheses must be considered, however. As discussed above, the integration of Khmer political, economic, and religious organization meant that the destruction of any one would have had profound consequences for the others. The Khmer economy was based on trade throughout the empire, religious contributions, and political redistribution, forming a network of exchange centered around the temples. Political collapse would have led to economic collapse, with serious consequences for the structure and organization of Khmer society.

Economic and political breakdown and recurrent warfare might also have had deleterious effects on health and may have led to an increase in disease and mortality. Abandoned rice fields may have served as more effective breeding grounds for mosquito malaria-vectors. Continual recurrent warfare (historical records indicate at least 6 campaigns of the Thai against the Khmer between 1350 and 1430 and more in later years) almost certainly engulfed the area between the Chao Phraya and the Tonle Sap. Even at

the end of the nineteenth century, when Aymonier and Lunet give population figures for the villages they visited on the Khorat Plateau, population densities seem to have remained far below those estimated for the late prehistoric and Khmer periods.

The post-Angkorian period thus presents Southeast Asian researchers with a major research question which the historical sources may well be inadequate to solve. Archaeology can fill that gap, but only if the historic cultural sequence is better controlled and only when archaeological research is directed specifically to answering questions about this period.

### SUMMARY

Southeast Asian historians have used the written historical records to interpret the political and economic organization of the Angkorian Khmer, and to a lesser extent pre-Angkorian, societies. Archaeological evidence, such as that for settlement patterns and temple placement, from regions within the ancient Khmer state can test these models. Archaeological data also have the potential to yield information on the small village settlements and to define geographically the spread of foreign influences through detailed study of the distribution of exotic artifacts.

For the early historic period, historians have already largely discarded earlier, more or less literal readings of the documentary record concerning the development of the pre-Angkorian "kingdoms" for a more critical reading of the texts. This reinterpretation of the meaning of the early texts has resulted in a number of alternative models of change and development for this period. At present, the archaeological data are not robust or refined enough to test these various models.

Treating the 400-year span of the Muang Sema phase, the critical period of transformation to statehood, as a single unit of time is not adequate. To examine the changes which led to the development of the Khmer state and understand the processes of transformation from the moated site settlements to the walled cities of the Khmer state, a finer-scale chronology will be needed. With a finer chronology, archaeological evidence of changes in settlement patterning, social stratification, and artifact distribution may play a more critical role in testing historical models and elucidating this transformation.

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